WESTPORT BOARD OF EDUCATION

<u>AGENDA*</u>

(Agenda Subject to Modification in Accordance with Law)

PUBLIC CALL TO ORDER/PLEDGE OF ALLEGIANCE
7:30 p.m., Staples High School, Cafeteria

ANNOUNCEMENTS FROM BOARD AND ADMINISTRATION

PUBLIC QUESTIONS/COMMENTS ON NON-AGENDA ITEMS (15 MINUTES)

MINUTES: December 3 and 10, 2018

DISCUSSION/ACTION

1. Update on Board Requests for Additional Information Concerning   Dr. Colleen Palmer
   the Plan for District Facility Utilization PreK-12   Dr. Anthony Buono
   Commencing with the 2019-20 Academic Year   Ms. Tina Mannarino
                                                                                                              Mr. Elio Longo
                                                                                                              Mr. John Bayers

2. Possible Vote on the Plan for District Facility Utilization PreK-12   Mr. Mark Mathias
   Commencing with the 2019-20 Academic Year

3. Possible Vote on Portables   Dr. Colleen Palmer

4. Master Facilities Plan RFP, *pages 1-12*   (Encl.)   Mr. Elio Longo

5. Approval of FY 2020 Budget Preparation Calendar   Mr. Elio Longo

DISCUSSION

1. Proposed Course Additions, Deletions, Modifications, 6-12   (Encl.)   Dr. Anthony Buono
   - Applied Algorithmic Design, *pages 13-18*   Dr. AJ Scheetz
   - Mobile App Development, *pages 19-24*

2. Westport NextGenEd Vision   Dr. Colleen Palmer

UPDATES

1. November Health and Medical Report, *page 25*   (Encl.)   Mr. Elio Longo

2. Finance and Facilities Committee   Ms. Elaine Whitney
                                                                                                              Mr. Neil Phillips

3. Teaching and Learning Committee   Ms. Candice Savin

ADJOURNMENT

*A 2/3 vote is required to go to executive session, to add a topic to the agenda of a regular meeting, or to start a new topic after 10:30 p.m. The meeting can also be viewed on Cablevision on channel 78; Frontier channel 6021 and by video stream @www.westportps.org

<u>PUBLIC PARTICIPATION WELCOME USING THE FOLLOWING GUIDELINES:</u>

- Comment on non-agenda topics will occur during the first 15 minutes *except* when staff or guest presentations are scheduled.
- Board will not engage in dialogue on non-agenda items.
- Public may speak as agenda topics come up for discussion or information.
- Speakers on non-agenda items are limited to 2 minutes each, except by prior arrangement with chair.
- Speakers on agenda items are limited to 3 minutes each, except by prior arrangement with chair.
- Speakers must give name and use microphone.
- Responses to questions may be deferred if answers not immediately available.
- Public comment is normally not invited for topics listed for action after having been publicly discussed at one or more meetings.

WESTPORT PUBLIC SCHOOLS
BUSINESS OFFICE
110 Myrtle Avenue
Westport, Connecticut 06880
(203) 341-1002

Elio Longo
Chief Financial Officer

December 4, 2018

Dear Sir/Madam:

You are invited to submit a RFP for a Master Plan Facilities Consultant for Westport Public Schools for the 2018/2019 school year. The attached RFP specifications detail our requirements.

Proposals must be submitted on the schedule form attached hereto. Each proposal must be submitted with one (1) original, five (5) copies, and one (1) electronic copy (USB Flash Drive) of the proposal. Proposers must submit proposals in a clear, concise and legible manner so as to permit proper evaluation of responsive proposals.

Faxed proposals will not be accepted. The proposals must be in a sealed envelope plainly marked:

> **MASTER PLAN FACILITIES CONSULTANT RFP**
> **OPENING DATE: 12/28/18**
> **OPENING TIME: 11:00 A.M.**
> **RFP NUMBER: 19-006**

Sealed RFP's for supplying the above will be received by the Business Office, at the above address until 11:00 a.m. on December 28, 2018, at which time they will be opened in Room 307. All proposers and other interested people are invited to be present at the opening of these proposals.

Very truly yours,

_____
Elio Longo

Westport Public Schools
Business Office – Room 300
110 Myrtle Avenue
Westport, Connecticut 06880

MASTER PLAN FACILITIES CONSULTANT RFP

OPENING DATE: 12/28/18
OPENING TIME: 11:00 A.M.
RFP NUMBER: 19-006

1. **PURPOSE**

   The Westport Public Schools (District) is seeking proposals to provide consulting services to prepare a Master Plan to serve as a tool in guiding the District in planning the facilities for the next 10 years. The plan will address District long and short term goals and reflect the needs of the school community. The results of the Master Plan will be used to assist the District's ranking of priorities and considerations in identifying future facility investments and improvements.

2. **BACKGROUND**

   The Town of Westport, CT, is located approximately 50 miles from New York City and has a population of approximately 26,000 people. Our 8 public schools have a current enrollment of 5,451 students and consist of 5 elementary schools (K-5), 2 middle schools (6-8), and one comprehensive high school (9-12). The district also offers Pre-K at Coleytown Elementary School with a current enrollment of 74. Employees for the system include approximately 600 certified staff and 340 classified staff. (Note: One of the District's middle schools is currently vacant while its viability is being assessed).

3. **SCOPE**

   Community Outreach:

   The scope of services will include individual school meetings with the community and the staff at each of the District's current school sites to identify key issues related to the school facilities. The consultant should be prepared to facilitate these meetings, collect and document input from the participants. The consultant will also meet with District staff to review the requirements of the District's administrative and maintenance facilities. The consultant shall also propose additional methods (e.g. interviews, surveys, and focus groups) to gather information and a schedule to obtain additional community input regarding school facilities. The consultant shall be available to provide four (4) public presentations as directed by the Westport Board of Education to share recommendations.

   Develop Education Specifications:

   Based on the District's current educational program, its vision for the future, and input from the community and staff, the consultant will develop educational specifications detailing the facilities needs for each grade configuration within the District.

Demographics and Enrollment Projections:

The consultant will review the results of a yet to be completed study of housing markets within the District and the enrollment projections for the current attendance area for 3, 5 and 10 year periods. This demographic study is expected to be completed in December 2018. The consultant will review these findings and recommend existing school site sizes and current and future school site and sizes to accommodate the projections.

Capacity and Utilization Study:

The consultant will acquire and review the results of the school site capacity study, including a full facilities inventory, and all outdoor spaces (e.g. playgrounds, playing fields, track), along with established State and local standards. The consultant shall utilize the results of this study which should be completed by June 1, 2019. The consultant shall utilize the results of the demographic study and, in conjunction with the capacity study, will provide recommendations regarding maximum site sizes, possible school additions or new sites as well as a review of current enrollment by school. The consultant may recommend the future use of schools currently under operation.

Facilities Equity Study:

The consultant will analyze and compare teaching and support spaces between the existing school sites by grade configuration. These findings will be compared with educational specifications to determine the need for changes or additions in facilities and spaces necessary to accommodate the instructional program.

Facilities Needs Assessment and Maintenance Schedules:

The consultant shall prepare a digital database of all existing District properties including location, land area, site improvements, square footage by use and specialized facilities. The consultant will use the database to review all existing facilities in detail to determine the need for repair and upgrades (e.g. HVAC, electrical, roof systems, building envelope). The consultant, working closely with the District's Facilities Department, Central Office administration and site-based administrative teams, will develop a 10-year facilities Capital Improvement Plan. The consultant will also work closely with the appropriate staff and incorporate the District's security and technology plans. The findings will include a detailed list of the needs for upgrades, changes and additions to the facilities on each school site and District facilities, including schedules of regular and deferred maintenance needs.

Cost Estimates:

The consultant will identify and project all costs associated with the recommended facility additions and improvements. The selected consultant will work with the District to identify the source of these

estimates and the construction cost escalation that may be applied for projected facilities, additions, upgrades and renovations.

<u>Financing Plan:</u>

The consultant will investigate and document all potential funding sources available to the District for use in completing the Facilities Master Plan. These sources include but are not limited to eligibility for State Reimbursements under various programs. All recommendations will comply with the Town's Charter, Board of Education policies and all relevant state and federal education requirements.

<u>Joint Use Agreements and Partnerships:</u>

The consultant will identify and suggest potential joint use agreements and community partnerships for the development of facilities and programs that will benefit the District and its students.

4. **ACCEPTANCES**

The Board will make determination of the acceptability of work. Work shall be completed in a responsive and professional manner and in accordance with the specifications.

5. **GENERAL TERMS AND CONDITIONS**

   a. Sealed proposals must be received by the time and date below. All proposers and other interested parties are invited to be present at the bid opening which will take place at Westport Town Hall, Rm. 307, 110 Myrtle Avenue, Westport, CT. All envelopes should be clearly marked:

   MASTER PLAN FACILITIES CONSULTANT RFP
   OPENING DATE: 12/28/18
   OPENING TIME: 11:00 A.M.
   RFP NUMBER: 19-006

   b. Proposers are urged to read all documents carefully and fill out all information requested. Proposals which are incomplete, obscure or conditional, and which contain irregularities of any kind, will be subject to rejection.

   c. Westport Public Schools reserves the right to reject any or all proposals or to accept any proposal, which appears to be in the best interest of the Board of Education. Any proposal may be withdrawn prior to the opening time and date. Any proposal received after the time and date as specified will not be accepted.

d. If Westport Public Schools deems it necessary, the District may postpone the date for the opening of the proposals by notifying each proposer by telephone, mail or the issuing of an addendum.

e. Westport Public Schools shall have the right to take such steps, as it deems necessary, to determine the ability of the proposer to perform the work and the proposer shall furnish Westport Public Schools with information and data for this purpose as requested. The District reserves the right to reject any proposal where, on investigation, the evidence or information submitted by such proposers does not satisfy Westport Public Schools and the proposer is not deemed qualified to carry out properly the terms of the contract.

f. Sealed Proposals are due at the Westport Public Schools Business Office on date noted. NO proposals will be accepted after the date and time specified. Whether the proposal is sent by mail or commercial express services, the proposer shall be responsible for actual delivery of the proposal to the Westport Public Schools before the deadline time. Proposals received after the deadline time will not be considered. Please clearly indicate proposal number on the lower left-hand corner of the envelope.

6. **QUESTIONS**

All questions must be directed to Elio Longo, Chief Financial Officer at: elongo@westportps.org. In the subject line of your e-mail, please put "RFP #19-006 Master Plan Facilities" in the subject line of the email.   All questions must be received no later than noon on December 21, 2018. Failure to comply with these conditions will result in the proposer waiving his/her right to dispute the proposal specifications and conditions. It is the proposer's responsibility to check our website for all addenda up to the day before the opening date.

7. **TAX**

No amount shall be added for the Connecticut Sales Tax or Federal Tax. The Westport Public School system is exempt from the payment of taxes imposed by the Federal Government and/or State of Connecticut. Taxes must not be included in the proposal price.

8. The Bidder is required to do Employee Background Checks as imposed by Section 2 of Public Act 16-67, which amended Conn. Gen. Stat. 10-222c.

COLLUSION AMONG BIDDERS

More than one offer from an individual, firm partnership, corporation or association under the same or different name will be rejected. Reasonable grounds for believing that a bidder is interested in more than one bid for the work contemplated will cause rejection of all bids in which the bidder is interested. Any or all bidders will be rejected if there is any reason for believing that collusion exists among the bidders.

Participants in such collusion may not be considered in the future for offers of the same work. Each bidder, by submitting a bid, certifies that it is not a part to any collusive action.

EMPLOYMENT DISCRIMINATION BY CONTRACTOR PROHIBITED

The successful bidder will not discriminate against any employee, or applicant for employment on the basis of race, color, religion, age, sex, marital status, sexual orientation, national origin, ancestry, disability (including pregnancy), genetic information, veteran status or gender identity or expression, except in the case of a bona fide occupational qualification. The successful bidder agrees to post in a conspicuous place, available to employees and applicants for employment, notices setting forth the provision of this nondiscrimination clause. The successful bidder in all solicitation or advertisements for employees, placed by or on behalf of the contractor, will state that such successful bidder is an Equal Opportunity Employer. Employment discrimination by contractor prohibited.

Notices, advertisements, and solicitations placed in accordance with Federal Law, rules or regulation shall, be deemed sufficient for the purpose of meeting the requirements of this section.

NON-COLLUSION AFFIDAVIT   **WESTPORT PUBLIC SCHOOLS**

State of _____:

County of _____: s.s.

I state that I am the_____ **of** _____
                        (TITLE)   (NAME OF MY FIRM)
and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the price(s) and the amount of this bid/RFP.

I state that:

(1)   The price(s) and amount of this bid/RFP have been arrived at independently and without consultation communication or agreement with any other contractor, bidder/proposer or potential bidder/proposer.

(2)   Neither the price(s) nor the amount of this bid/rfp, and neither the approximate price(s) nor approximate amount of this bid/rfp, have been disclosed to any other firm or person who is a bidder/proposer or potential bidder/proposer, and they will not be disclosed before bid/rfp opening.

(3)   No attempt has been made or will be made to induce any firm or person to refrain from bidding/proposing on this contract, or to submit a bid/proposal higher than this bid/rfp, or to submit any intentionally high or noncompetitive bid/rfp or other form of complementary bid/rfp.

(4)   I fully understand that more than one offer from an individual, firm partnership, corporation or association under the same or different name will be rejected. Reasonable grounds for believing that a bidder/proposer is interested in more than one bid/rfp for the work contemplated may cause rejection of all bids/rfps in which the bidder/proposer is interested. Any or all bidders/proposers will be rejected if there is any reason for believing that collusion exists among the bidders/proposers. Participants in such collusion may not be considered in the future offers for the same work. Each bidder/proposer by submitting a bid/proposal certifies that it is not a part to any collusive action.

(5)   The bid/rfp of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid/proposal.

(6)   _____its affiliates, subsidiaries, officers,
                    (NAME OF MY FIRM)
directors and employees are not currently under investigation by any governmental agency and have not in the last four years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding/proposing on any public contract, except as follows:

I state that _____ understands and acknowledges that
(NAME OF MY FIRM)

the above representations are material and important, and will be relied on by Westport Public Schools in awarding the bid/proposal for which this is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from Westport Public Schools of the true facts relating to the submission of bids/proposals for this contract.

(7) I agree to furnish and deliver all services on the date and time agreed on by _____ and the Westport Board of Education at
(NAME OF MY FIRM)
the time the purchase order is placed. Furthermore, there will not be any cancellations to the Board of Education. If a bidder/proposer submits a bid/proposer on any item he/she will be responsible for delivering that item at the bid/proposal cost, in accordance with the attached above specifications, which were submitted with this bid/proposal and upon which the bid/proposal was made.

(8) In submitting this bid/proposal, the undersigned declares that this is made without any connection with any persons making another bid/proposal on the same contract; that the bid/proposal is in all respects fair and without collusion, fraud or mental reservation; and that no official of the Town, or any person in the employ of the Town, is directly or indirectly interested in said bid/proposal or in the supplies or work to which it relates, or in any portion of the profits thereof.

(9) The undersigned further understands that the above declarations are material representations to the Town of Westport made as a condition to the acceptance of the bid/proposal. If found to be false, the Town of Westport retains the right to reject said bid/proposal and rescind any resultant contract and/or purchase order and notify the undersigned accordingly, thereby declaring as void said bid/proposal and contract or purchase order.

VENDOR INFORMATION. (Please print the following)

_____
VENDOR NAME

_____
ADDRESS

_____
TELEPHONE   **FAX #**

_____
E-MAIL   **WEB SITE**

_____
PRINT NAME   **TITLE**

_____

(10)   By signing this bid/proposal the bidder/proposer understands and agrees to the attached terms, conditions, and specifications, including Collusion among Bidders/Proposers Employment Discrimination by the Contractor Prohibited.

_____
SIGNATURE

TOTAL COST FOR SERVICES

$ _____

REFERENCES

Please list up to five (5) school districts where your company has performed these or similar services in the past fifteen (15) years.

1.
_____
NAME AND ADDRESS

_____
CONTACT PERSON AND TELEPHONE NUMBER

2. _____
NAME AND ADDRESS

_____
CONTACT PERSON AND TELEPHONE NUMBER

3.
_____
NAME AND ADDRESS

_____
CONTACT PERSON AND TELEPHONE NUMBER

4.
_____
NAME AND ADDRESS

_____
CONTACT PERSON AND TELEPHONE NUMBER

5. _____
NAME AND ADDRESS

_____
CONTACT PERSON AND TELEPHONE NUMBER

Insurance Requirements: Before starting and until final completion and acceptance of the work called for in the Contract and expiration of the guarantee period provided for in the Contract, the Contractor and its subcontractors, if any, shall procure and maintain insurance of the types and amounts checked in paragraphs A through F below for all Contract operations.

☒　**A.**　**General Liability, with minimum coverages for combined bodily injury and property damage liability of $2,000,000 general aggregate, $1,000,000 per occurrence including:**

　　☒　**1.**　**Commercial General Liability.**
　　☒　**2.**　**Town as additional insured.**
　　☐　**3.**　**Owners and Contractors Protective Liability (separate policy in the name of the Town).**

☒　**B.**　**Comprehensive Automobile Liability, with minimum coverages of $1,000,000 combined single limit for bodily injury and property damage, including, where applicable, coverage for any vehicle, all owned vehicles, scheduled vehicles, hired vehicles, non-owned vehicles and garage liability.**

☒　**C.**　**Excess Liability, with minimum coverage of $5,000,000 in umbrella form, or such other form as approved by Town Department Head and Risk Management Director.**

☒　**D.**　**Workers' Compensation and Employer's Liability, with minimum coverages as provided by Connecticut State Statutes.**

☒　**E.**　**Professional Liability (for design and other professionals for Errors and Omissions), with minimum coverage of $1,000,000. If the policy is on a claims-made basis, coverage shall be continually renewed or extended for three (3) years after work is completed under the Contract.**

☐　**F.**　**Other (Builder's Risk, etc.):_____ .**

☒　**G.**　**CERTIFICATE HOLDER: TOWN OF WESTPORT AND WESTPORT BOARD OF EDUCATION ATTN: BOARD OF EDUCATION – Room 300 110 Myrtle Avenue, Westport, CT 06880.**

A letter from the awarded vendor's agent/broker certifying that the Town of Westport and Westport Board of Education have been endorsed onto the general liability policy as an additional insured is also <u>mandatory</u>.

NEW COURSE PROPOSAL FORM

Course Title: Applied Algorithmic Design

Credit: 0.5

Credit Area(s): Science

Course Proposed by: _____ Administration   _____ Board of Education

_____ Student(s)   ____ K-12 Curriculum Review

__X__ Department   _____ Other (specify)

Course Catalog Description:

> **Applied Algorithmic Design**
>
> Students will learn about complex algorithms to build sophisticated programs, leveraging their knowledge from Introduction to Programming (which focused mostly on syntax and simple algorithms). Examples of some of the algorithms that will be investigated include path-finding algorithms, collision detection algorithms and tree/fractal algorithms. Feedback loops, simple AI, state machines, sprite mechanics and randomization techniques will also be covered as components necessary for developing more sophisticated programs. Deeper knowledge of algorithms and strategies will allow students to develop more realistic and complex programs.

Prerequisite(s):

> Introduction to Programming

COURSE/DEPARTMENT INFORMATION:

How many electives does your department currently offer?

> Twenty nine

How does this course fit into the course offerings?
          (Is it a stand alone, is it part of a sequence or is it replacing another course?)

> This course is designed to follow Introduction to Programming but it may be taken at any time after that. It will allow students to develop a deeper understanding of and become more fluent in complex programming constructs not covered in our AP-level class.

Unit	Essential Questions	Standards	Content
Collision Detection Algorithms, Noise/Fractal Algorithms, Path-Finding Algorithms	How do algorithms provide consistent output? How do we use algorithms to create the output that is desired? Why do we use algorithms in programming?	(HS-ETS1-2). Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.	Students will investigate the varieties of collision detection algorithms, for varieties of shapes and surfaces on objects. They will investigate using fractal algorithms to develop scenery, for example, and path finding to move sprites through landscapes. Students will use concepts to develop their own versions of these ideas in their own program.
Feedback loops, AI, game mechanics and logic, state machines, randomization	How do feedback and mechanics interact with a program to change the outcome? How does a program progress through allowed states? Why do we use different techniques for introducing randomization and noise into a program?	(HS-ETS1-4) Use mathematical models and/or computer simulations to predict the effects of a design solution on systems and/or the interactions between systems.	Students will investigate different types of interactions with programs to understand how feedback loops might affect user behavior. Students will investigate AI, game mechanics, state machines and randomization to experience the effects on their own programs. Students will select techniques to incorporate into their own projects.
Building a game or simulation	How do the pieces work together to create a complete system?	(HS-ETS1-2). Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.	Students will incorporate the components developed throughout the semester into a complex game or simulation.

Who is your target audience?

Any student who has completed Introduction to Programming.

Has your department discussed the pros and cons of this submission?

Yes. We discussed in February.

What percentage of the department voted "yes" to bring this course forward?

88% of department voted yes.

RATIONALE:

How does this course contribute to the department's goals and objectives?

The department's general goal is to produce graduates who are informed consumers of science information and who are well prepared to pursue a career in STEM if they choose to do so. This course allows students to develop stronger programming skills, while also helps students develop an interest in how the programs work from a Computer Science point of view.

What is the need this course addresses?

> This course addresses the need to satisfy student's desire for additional programming courses through their high school career.

How does this course support the recommendation of the latest K-12 review?

How does this align to your current department accepted standards?

> Please see the table above. This course aligns directly with the new state science standards, the NGSS.

How does this course support the Staples Mission Statement?

> *The Staples High School community inspires learning, fosters integrity, and nurtures empathy.*
>
> This course will fulfill all elements of the Staples Mission Statement through real-world and career connections through the study of embedded systems programming. Students will engage in inquiry, explore problems and solutions.

How does this course support the goals of the Westport 2025 initiative?

> Creative→ Students will be encouraged and indeed taught to ask questions about the way algorithms operate, to attempt to answer those questions, and to look for unexpected results.
>
> Communication→ During collaborative learning, students will advocate for their ideas but also work together to come to solve problems and build solutions.
>
> Critical Thinking→ Students will be asked to connect their new learning to create a new understanding. They will base decisions on what they need to learn next based on prior knowledge, and they will break down ideas into their most fundamental/mechanistic level.
>
> Global Thinking→ Students will always be working on meaningful problems since they will see the coherence between what they are trying to figure out and what they have already learned. Through collaborative learning, they will gain an understanding of the problem through discussion of different points of view.

Establish a flow chart of courses and indicate where this course will fit in.

The sequences for the semester long courses are as follows. Introduction to Programming is a prequisite for the other Introductory courses.   Web courses and Embedded courses can be taken in any order.

Advanced courses are identified in *italics*.   The prequesites for those courses ar the appropriate Introductory course.

Students may choose to take the courses as introductory and advanced for each topic or students may choose to take each of the introductory courses before choosing any advanced options. Other combinations are certainly possible.

Java Programming	Web and Mobile	Embedded
Introduction to Programming 1 semester	Introduction to Web Programming 1 semester	Introduction to Embedded Systems 1 semester
Applied Algorithmic Design 1 semester	*Building Web APPs 1 semester*	
	Building Mobile APPs 1 semester (if approved)	

OR:

Java Programming	Embedded	Web and Mobile
Introduction to Programming 1 semester	Introduction to Embedded Systems 1 semester	Introduction to Web Programming 1 semester
Applied Algorithmic Design 1 semester		*Building Web APPs 1 semester*
		Building Mobile APPs 1 semester (if approved)

Year Long Course:
Advanced Placement Computer Science can be taken any time after Introduction to Programming. It can be taken concurrently with additional computer science courses.

Introduction to Programming 1 Semester	Advanced Placement Computer Science Full Year

STAPLES EXPECTATIONS FOR STUDENT LEARNING:

Academic Expectations:

Students will be expected to engage in nonfiction reading and writing in this course.
Students will be expected to work across disciplines and use prior knowledge to drive conclusions and solutions.
Students will be expected to collaborate, communuicate, and connect ideas.

Civic Expectations:

Perseverance in spite of difficulties; supporting each other when stuck.
Communicating and Critiquing Conclusions
Taking Informed Action/Advocacy

Social Expectations:

Collaborating to research and solve problems
Work with real-world issues, explore careers in the field

Student Learning Outcomes:

Skills (what students will be able to do):

Analyze and interpret data, particularly when debugging programs and systems.

Use mathematics and computational thinking to design algorithms and models for their systems.

Constructing explanations and designing solutions

Assessment(s):

- Problem Sets - Stand-alone Programs, Simulations, and Games
- Performance-based assessments

BUDGET AND FACILITY CONSIDERATIONS:

Staffing Requirements:

Will this create an additional staffing need within the department?

> We do not anticipate any impact on staffing..

Budget Requirements:

Equipment, materials, textbooks? Please distinguish between a one time only and a yearly expense.

> Students will bring their own devices for programming..

Facility Requirements:

Minimum Number of Students Needed to Run this Class:

> 15

Is there classroom availability within the department for this class? If not, how will this class be accommodated within the school?

> We will be drawing from the same student population, so there should be minimal impact on science instructional space.

Are there physical needs or limitations for this course? (water, power, room size, etc.)

Course Title: Mobile APP Development

Credit: 0.5

Credit Area(s): Science

Course Proposed by: _____ Administration   _____ Board of Education

_____ Student(s)   ____ K-12 Curriculum Review

__X__ Department   _____ Other (specify)

Course Catalog Description:

Mobile APP Development

In this course students will learn how to build Mobile APPs, standalone programs that operate in mobile devices such as a phone or tablet. Students will use front-end development tools for UI design and integration with the platform SDK to access device features. Students will integrate their APP with back-end services for user authentication, data services, security and metrics. By the end of the course students will create and deploy their own Mobile APP.

Prerequisite(s):

Introduction to Web Programming and AP CSP or Building Web Apps or per recommendation of Instructor

COURSE/DEPARTMENT INFORMATION:

How many electives does your department currently offer?

Twenty nine

How does this course fit into the course offerings?
(Is it a stand alone, is it part of a sequence or is it replacing another course?)

This course is designed to be a capstone course in the CS sequence. Students will have completed Intro Programming, Algorithms, Intro Web, Building Web Apps and AP CSP.

Unit	Essential Questions	Standards	Content
Unit 1 - Building User Interface for Mobile Apps using a supported Integrated Development Environment	How is Mobile APP design different from Web and Desktop Apps.	(HS-ETS1-2). Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.	Students will investigate and use an IDE to develop their first APP project. Students will learn to instantiate and connect to core graphics objects provided by the platforms SDK.
Unit 2 - Event based Programming. Connecting asynchronous events to User Interface Elements	How do asynchronous events interact with programs? Why do programs need mechanisms to handle asynchronous events?	(HS-ETS1-4) Use mathematical models and/or computer simulations to predict the effects of a design solution on systems and/or the interactions between systems.	Students will build functional APPs which respond to user interaction. Students will debug their APPSs within the simulators supplied in the IDE.
Unit 3 - Building APPs using the Model View Control Structure	How do the pieces work together to create a complete system?	(HS-ETS1-2). Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.	Students will incorporate the components developed throughout the semester into a deplyoable, live APP.
Unit 4 - Additional Extension to the APP development environment	What are additional capabilities available to use in the APP development ecosystem? Why are there libraries for these additional capabilities?	(HS-ETS1-2). Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.	Students will extend the capabilities of their projects by including aspects such as networking, database storage, geolocation and metrics.

Who is your target audience?

Any student who has completed Introduction to Web APPs and desires to take further computer science courses.

Has your department discussed the pros and cons of this submission?

Yes - we discussed during February.

What percentage of the department voted "yes" to bring this course forward?

88% of department approved.

RATIONALE:

How does this course contribute to the department's goals and objectives?

The department's general goal is to produce graduates who are informed consumers of science information and who are well prepared to pursue a career in STEM if they choose to do so. This course allows students to develop stronger programming skills, while also helps students develop an interest in how the programs work from a Computer Science point of view.

What is the need this course addresses?

This course addresses the need to satisfy student's desire for additional programming courses through their high school career.

How does this course support the recommendation of the latest K-12 review?

How does this align to your current department accepted standards?

Please see the table above. This course aligns directly with the new state science standards, the NGSS.

How does this course support the Staples Mission Statement?

The Staples High School community inspires learning, fosters integrity, and nurtures empathy.

This course will fulfill all elements of the Staples Mission Statement through real-world and career connections through the study of embedded systems programming. Students will engage in inquiry, explore problems and solutions.

How does this course support the goals of the Westport 2025 initiative?

Creative→ Students will be encouraged and indeed taught to ask questions about the way algorithms operate, to attempt to answer those questions, and to look for unexpected results.

Communication→ During collaborative learning, students will advocate for their ideas but also work together to come to solve problems and build solutions.

Critical Thinking→ Students will be asked to connect their new learning to create a new understanding. They will base decisions on what they need to learn next based on prior knowledge, and they will break down ideas into their most fundamental/mechanistic level.

Global Thinking→ Students will always be working on meaningful problems since they will see the coherence between what they are trying to figure out and what they have already learned. Through collaborative learning, they will gain an understanding of the problem through discussion of different points of view.

Establish a flow chart of courses and indicate where this course will fit in.

The sequences for the semester long courses are as follows. Introduction to Programming is a prequisite for the other Introductory courses.   Web courses and Embedded courses can be taken in any order.

Advanced courses are identified in *italics*.   The prequesites for those courses ar the appropriate Introductory course.

Students may choose to take the courses as introductory and advanced for eash topic.   Students may also choose to take each of the introductory courses before choosing advanced options.

Java Programming	Web and Mobile	Embedded
Introduction to Programming 1 semester	Introduction to Web Programming 1 semester	Introduction to Embedded Systems 1 semester
Applied Algorithmic Design 1 semester (if approved)	*Building Web APPs 1 semester*	
	Building Mobile APPs 1 semester	

OR:

Java Programming	Embedded	Web and Mobile
Introduction to Programming 1 semester	Introduction to Embedded Systems 1 semester	Introduction to Web Programming 1 semester
Applied Algorithmic Design 1 semester (if approved)		*Building Web APPs 1 semester*
		Building Mobile APPs 1 semester

Year Long Course:
Advanced Placement Computer Science can be taken any time after Introduction to Programming. It can be taken concurrently with additional computer science courses.

Introduction to Programming 1 Semester	Advanced Placement Computer Science Full Year

STAPLES EXPECTATIONS FOR STUDENT LEARNING:

Academic Expectations:

Students will be expected to engage in nonfiction reading and writing in this course.
Students will be expected to work across disciplines and use prior knowledge to drive conclusions and solutions.
Students will be expected to collaborate, communuicate, and connect ideas.

Civic Expectations:

Perseverance in spite of difficulties; supporting each other when stuck.
Communicating and Critiquing Conclusions
Taking Informed Action/Advocacy

Social Expectations:

Collaborating to research and solve problems
Work with real-world issues, explore careers in the field

Student Learning Outcomes:

Skills (what students will be able to do):

Analyze and interpret data, particularly when debugging programs and systems.

Use mathematics and computational thinking to design algorithms and models for their systems.

Constructing explanations and designing solutions

Assessment(s):

- Problem Sets - Stand-alone Programs, Simulations, and Games
- Performance-based assessments

BUDGET AND FACILITY CONSIDERATIONS:

Staffing Requirements:

Will this create an additional staffing need within the department?

> We do not anticipate any impact on staffing..

Budget Requirements:

Equipment, materials, textbooks? Please distinguish between a one time only and a yearly expense.

> Students will bring their own devices for programming.

Facility Requirements:

Minimum Number of Students Needed to Run this Class:

> 15

Is there classroom availability within the department for this class? If not, how will this class be accommodated within the school?

> We will be drawing from the same student population, so there should be minimal impact on science instructional space.

Are there physical needs or limitations for this course? (water, power, room size, etc.)

Medical Health Insurance
FY 18-19 Projections
(as of 11/30/18)

	FY 19 Projection
Cash receipts	
General Fund Budget from line 210	15,203,452
Other Fund Contributions	100,000
Employee Contributions (Active)	3,045,340
Flex Spending Accounts	-
Cobra Participants	-
Retirees - Under 65	375,000
State Teachers Retirement (TRB)	115,000
Life Insurance Premiums	25,000
Retirees Medicare Surround	598,619
Other Contributions (FMLA, Retiree Life, etc.)	64,500
Prescription Guarantee Adjustment	-
Pharmacy Rebate	-
Total cash receipts	**19,526,911**
Cash disbursements	
State Partnership Plan 2.0 (10 months)	13,222,576
Medical & Prescription (2 Months Self insured)	2,800,000
IBNR	1,300,000
Dental	1,147,718
Flex Spending Accounts	-
Contribution to HSA	-
Medical Administrative	66,322
Network Access Fee	25,546
Individual Stop-Loss	171,662
Dental Administrative	55,931
FSA Administrative	2,000
Consulting Fee	52,500
PCORI Fee	4,525
Retirees Medicare Surround	913,706
Total cash disbursements	**19,762,486**
Change in cash balance	**(235,575)**
Beginning cash balance	**1,695,998**
FY 19 Pre funded by Town	(1,500,000)
Change in Cash	(235,575)
Net Position(Deficit) end of year-projection	**(39,576)**

		Medical/Rx (HDHP)	Medical/Rx (SPP)	IBNR	Dental	Flex/Other
HDHP						
Jul 2018		$ 1,514,635	-	-	$ 99,980	$ 775
Aug 2018		$ 1,611,274	-	-	$ 90,743	$ 190
Sep 2018			$ 1,318,542	979,962	$ 90,285	$ 7,367
Oct 2018			$ 1,338,285	200,148	$ 111,642	$ 8,791
Nov 2018			$ 1,349,207	$ 116,084	$ 72,889	$ 7,760
	Actual	$ 3,125,910	$ 4,006,034	$ 1,296,194	$ 465,539	$ 24,883
	Budget	$ 2,800,000	$ 13,222,576	1,300,000	$ 1,147,718	
	Actual vs. Budget	$ (325,910)	-	-	-	
	Actual YTD Spend Rate	111.6%	30.3%	99.7%	40.6%	
	Theoretical YTD Spend Rate	100.0%	30.0%	100.0%	41.7%	
	YTD variance %	11.6%	0.3%		-1.1%	
	YTD variance $		$ (39,261)		$ 12,677	
	Projected Trend full year		$ (130,871)		$ 30,424	